Tribioscience

Pediococcus damnosus qPCR Detection Kit (TBS42066)

Single-Tube Probe-Based qPCR Kit for Detection of Pediococcus damnosus

Catalog Number	Kit Size
TBS42066-100	100 assays
TBS42066-200	200 assays

DESCRIPTION

Pediococcus damnosus are gram-positive, catalase-negative, facultative anaerobic lactic acid bacteria. *Pediococcus damnosus* is commonly found in food and beverage fermentation, and their detection is critical for quality control, contamination monitoring, and scientific research.

The Tribioscience *Pediococcus damnosus* qPCR Detection Kit is specifically used to detect *Pediococcus damnosus* species in a single real-time quantitative PCR (qPCR) reaction using fluorescent probes. Detection of the target DNA confirms ingredient authenticity and helps prevent food fraud.

PRINCIPLE

The kit is based on probe real-time qPCR technology, which amplifies specific gene sequence of *Pediococcus damnosus*. Target-specific fluorescent probe is bonded to the amplified PCR products. As PCR products accumulate in PCR amplification, the fluorescence signal increases. By monitoring fluorescence intensity in real time, the kit allows the quantitative detection of the target DNA during the PCR amplification, providing rapid and accurate results.

KEY FEATURES

- High sensitivity and specificity for *Pediococcus damnosus*.
- High efficiency: the optimal systemic conditions for PCR amplifications.
- Streamlined protocol: just add DNA Template and water.
- No cross reactivity with other species.

APPLICATIONS

qPCR detection of *Pediococcus damnosus* is used in food and beverage production, fermentation process control, spoilage prevention, and microbial ecology studies to rapidly and specifically quantify the bacteria.

KIT CONTENTS

Name	100x rxn	200x rxn
qPCR Super Mix (B1)	0.9 mL	1.8 mL
Primer-probe Mix (B2)	0.5 mL	1.0 mL
Positive Control DNA (B^+)	10 µL	20 µL
Negative Control DNA (B^-)	60 µL	120 µL

The *Pediococcus damnosus* target probe has been labeled with FAM while the PCR internal control has been labeled with Hex.

STORAGE CONDITION

The kit is shipped on ice and stored at -20°C for long-term storage. Shelf life of 12 months after receipt.

PCR PROTOCOL

1.Standard Control DNA Preparation: The Positive Control DNA stock is 200 ng/µL in the kit. Perform 7 serial dilutions of the Standard Control DNA at 10-fold manner by diluting 2 µL Standard DNA into next 18 µL Nuclease-Free water in each concentration as Fig. 1. Dilutions 1/10 to 1/10000000 will be used for generating the standard curve.

Fig.1: DNA Standard Preparation

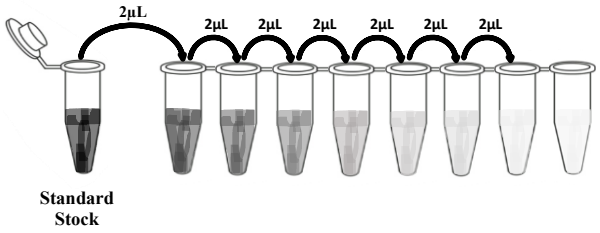


Table1: DNA Standard Concentration:

Dilution	Positive control (ng/µL)
1/10	20
1/100	2
1/1000	0.2
1/10000	0.02
1/100000	0.002
1/1000000	0.0002
1/10000000	0.00002
Negative	0

Note: if you do not need standard curve preparation, use 1/10 dilution of Positive Control stock as positive control (20 ng/µL) and 5 µL/reaction.

2. Set up PCR reaction for each sample in 20 µL

Reaction Component	Volume (µL)
qPCR Super Mix (B1)	9.0
Primer-probe Mix (B2)	4.0
Nuclease-free Water	2.0
DNA sample	5.0
Final Volume	20µL

Positive Control (5µL/reaction) Negative Control (5µL/reaction) should be included in the PCR amplification.

3. Suggested PCR conditions

Step	PCR Amplification		
	HOLD	CYCLE (40x cycles)	
		Denature	Anneal/ Extend
Temperature	94°C	94°C	60°C
Time	1 min	10 sec	1min

DATA ANALYSIS

Positive Reaction: Sample Ct ≤ 37, w/ Positive, Negative and Blank controls normal.

Negative Reaction: Sample Ct > 37, w/ Positive, Negative and Blank controls normal.

PCR internal control Hex signal is positive in all samples, positive and negative controls. The positive response indicates a normal PCR amplification. Otherwise, the PCR reaction may be inhibited.

Repeat Reaction: If one of the control reactions is not normal, PCR reaction fails and should be repeated.

Fig.2: DNA Standard PCR amplification

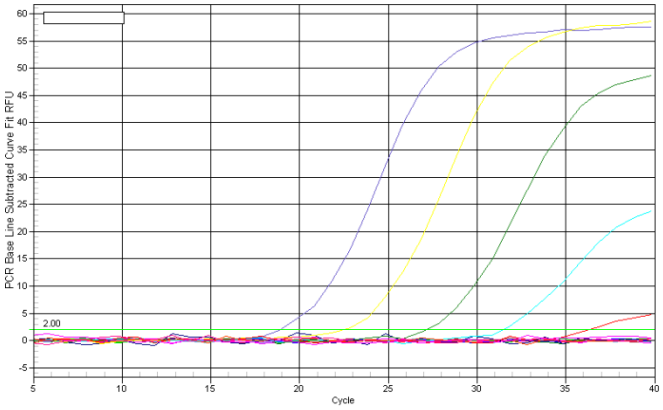
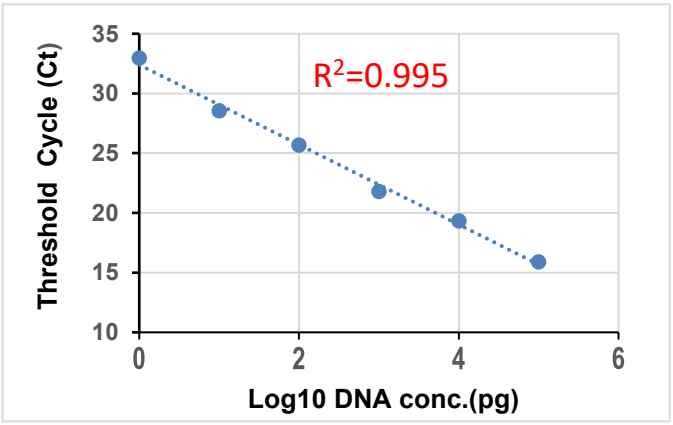


Fig.3: DNA Standard Curve



RELATIVE PRODUCTS

TBS6025: Microbial DNA Magnetic Extraction
TBS6039: Dead Bacterial Eraser Kit
TBS42026: O157H7 E. Coli qPCR
TBS42014: Arabis Mosaic Virus RT-qPCR Detection System
TBS42015: Hop Latent Viroid RT-qPCR Detection System
TBS42021: Aspergillus Flavus qPCR
TBS42022: Aspergillus Fumigatus qPCR
TBS42023: Aspergillus Niger qPCR
TBS42024: Aspergillus Terreus qPCR
TBS42025: 4-In-1 Aspergillus qPCR
TBS42027: STEC qPCR
TBS42028: Salmonella qPCR
TBS42029: STEC and Salmonella Multiple qPCR
TBS42031: Listeria Monocytogenes qPCR
TBS42032: Listeria Species qPCR
TBS42033: Bacillus Cereus qPCR
TBS52050: Staphylococcus – Pseudomonas Multiple qPCR
TBS42051: E. Cole Salmonella Multiple qPCR
TBS42065: Pediococcus app. qPCR

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